Features

- 1.6mmx0.8mm SMT LED, 0.75mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Moisture sensitivity level: level 3.
- RoHS compliant.

Description

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

Package Dimensions

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.
Selection Guide

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>( I_v ) (mcd) [2] @ 20mA</th>
<th>Viewing Angle [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>APT1608SRCPRV</td>
<td>Super Bright Red (GaAlAs)</td>
<td>Water Clear</td>
<td>55</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes:
1. \( \theta_{1/2} \) is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.

Electrical / Optical Characteristics at TA=25°C

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Device</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
<th>Test Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda_{\text{peak}} )</td>
<td>Peak Wavelength</td>
<td>Super Bright Red</td>
<td>660</td>
<td>nm</td>
<td>( I_f=20mA )</td>
<td></td>
</tr>
<tr>
<td>( \lambda_D [1] )</td>
<td>Dominant Wavelength</td>
<td>Super Bright Red</td>
<td>640</td>
<td>nm</td>
<td>( I_f=20mA )</td>
<td></td>
</tr>
<tr>
<td>( \Delta \lambda_{1/2} )</td>
<td>Spectral Line Half-width</td>
<td>Super Bright Red</td>
<td>20</td>
<td>nm</td>
<td>( I_f=20mA )</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Super Bright Red</td>
<td>45</td>
<td>pF</td>
<td>( V_i=0V; f=1\text{MHz} )</td>
<td></td>
</tr>
<tr>
<td>( V_F [2] )</td>
<td>Forward Voltage</td>
<td>Super Bright Red</td>
<td>1.85</td>
<td>2.5</td>
<td>V</td>
<td>( I_f=20mA )</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse Current</td>
<td>Super Bright Red</td>
<td>10</td>
<td>( \mu A )</td>
<td>( V_i=5V )</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

Absolute Maximum Ratings at TA=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Super Bright Red</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>75</td>
<td>mW</td>
</tr>
<tr>
<td>DC Forward Current</td>
<td>30</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>155</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
</tbody>
</table>
Super Bright Red APT1608SRCPRV

Relative Radiant Intensity

\[
\text{wavelength } \lambda \text{ (nm)}
\]

RELATIVE INTENSITY Vs. WAVELENGTH

\[
T_a = 25^\circ C
\]

Forward Current (mA)

Forward Voltage (V)

FORWARD CURRENT Vs. FORWARD VOLTAGE

Luminous Intensity

Relative Value at 20mA

LUMINOUS INTENSITY Vs. FORWARD CURRENT

Forward Current (mA)

Ambient Temperature \( T_a \) (°C)

FORWARD CURRENT DERATING CURVE

Luminous Intensity

Relative Luminous Intensity

LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

Spatial Distribution

\[
\theta = 10^\circ, 20^\circ, 30^\circ
\]

\[
\phi = 0^\circ, 45^\circ, 90^\circ
\]
Reflow soldering is recommended and the soldering profile is shown below. Other soldering methods are not recommended as they might cause damage to the product.

NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't expose the product to high temperature.
3. Number of reflow process shall be 2 times or less.

Recommended Soldering Pattern
(Units : mm; Tolerance: ± 0.1)

Reel Dimension

Tape Dimensions
(Units : mm)
PACKING & LABEL SPECIFICATIONS

APT1608SRCPRV

USER DIRECTION OF FEED

2,000pcs / Reel

LABEL

1 Reel / Bag

OUTSIDE LABEL

60K / 56# BOX

OUTSIDE LABEL

30K / 55# Box

Kingbright

F/NO: APT1608xxx

QTY: 2,000 pcs
Q.C. PASS

S/N: XXXX

CODE: XXX

LOT NO:

RoHS Compliant